

Knowledge: Understanding, Structuring and Employing

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ABSTRACT

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Introduction

Scientific Knowledge

Scientific Knowledge (and epistemology, which deals with the way of cooking it, in a sense, often almost literal, with a perspective of “recipes” of the “old” cook books, with x grams of this and y grams of that - what in epistemology is serious, both for the functions it must perform, or for the reasons we list below on “routines and innovation”) is like a... potato – we can fry it, bake it, grill it,Which does not mean, in any way, that we can use it in anyway. We have to consider the “dishes” in which it will be integrated, the taste of those who will eat it, the effects that result, the resulting cost / satisfaction ratio, the usefulness it will have, the risks it can bring, the benefits it offers, etc. This is either in the case of potatoes and in the case of scientific knowledge, of course. Today, both in science and in the kitchen, we must be able to distinguish between two completely different options, in their dynamics, in their consequences, in their causes, in the short, medium and long term.

Routines

Repeat, day by day, the same process, as regularly and faithfully as possible in order to always obtain the same results (in the cooking or looking for the replication of results). In these cases, automation or even robotization is, practically always, the safest, most economical and most efficient way to carry out the process.

Cooks or scientists naturally move to equipment and operating controllers (until they are dispensed because useless, since the maintenance itself is also automated);

Innovation

Perform, day by day (or when inspiration permits), “unique pieces”, exploring opportunities, conditionings and conjunctures, seeking to innovate and optimize solutions that meet needs or aspirations. To answer to requests with so many features (see, above – ...“we have to consider the dishes in which it will be integrated, the taste of those who will eat it, the effects that result, the resulting cost / satisfaction ratio, ...), at the same time, it becomes complex, even if the response obtained in the end is very simple – the complexity is on the road, in the search for solutions (like what nature has done for millions of years).

In a minimally structured and developed society (many do not respond to one of these characteristics, or both, despite the faces they present and even if they are considered “mighty” – often because they are focused on very praised but out-of-date concerns, forgetting the “new essentials”, with advertising machines and technologies, these rather updated) increasingly the routines need fewer people so that the subsistence conditions (basic but essential) are satisfied and are, therefore, increasing human resources (human capital) available for innovation, if education has fulfilled

its function (as will certainly happen in a properly structured society, of course). Wealth (*lato senso* and not merely financial or economic), there, increases exponentially. Other societies keep “falling behind” (at least relatively) or going into crisis because they do not have the necessary “traction”, although they may seem to be working normally.[Note: the traction image is clear and explain the articulation of 1. there is not the necessary friction, on the one hand, and on the other hand, 2, the power is wasted or even counterproductive - a mutually destructive relationship].

Changes in Logic – and Mistakes that are Often Made, but not Less Serious

The changes in “logic” (in the sense of structures, strategies and their rules – still in an Aristotelian view that is contradicted in its “three principles” – a) of identity, b) non-contradiction and, c) of the two options, yes or no –each of which is completely contradicted, for example, but not only, by quantum physics) are thus essential (even before the “great” rupture that is imposed - great is a form of expression, because a rupture, in the sense that Thomas Kuhn uses the term, is a break, as below we will see in a perspective that considers the inherent dialectics, therefore always “enormous”), so that balances can be maintained and preserved the coherence that allows us to survive (as well as possible, of course).

In fact, “logic changes” are essential and as important as upgrading equipment, strategies, etc... But the “logics” used are often forgotten, because they are implicit and we rarely explain them, ignoring even their existence in most cases.

The examples are many and well known, let’s just remember:

1. The Earth moves, Galileo once said (but softly, despite the powerful friends he had in the Vatican; unlike his contemporary, Giordano Bruno, who ended up at the stake). And yet, we take it as a fixed reference of movements (and respective inferences);
2. If we had a vision that encompassed the ability to detect the x-rays, this (same) world would be looked as quite differently. If most of us were blind (and not, fortunately, a minority) the conception of this (equal) world would be another.
3. If we want to innovate by adding “old parts” (like a little of an elephant, a giraffe legs, ...) – how is visible in what is presented to us in most fiction (? lack of imagination?) the result is “cowboys riding dragons or pink zebras”. To try to innovate by following different paths, namely by verifying the results of other principles and forms of guidance – as we often see in forms of micro-organisms that come out of the picture to which we are accustomed, the results are quite different.
4. The continents move (derive), not even in death things change ceases, and no one is eternal...;

5. The opposite of an error may not be “the good solution”.

We all know this, but most (all?) forget that accepting any of those evidence requires restructuring the coherences in which we are situated and the balances we consider (meaning everything).

Changing logic is not easy. See Thomas Kuhn with his “*The logic of scientific revolutions*”.

Some Examples of Errors

Not adjusting the logics to existing conditions has costs which are often higher than the costs of change.

However, we prefer to ignore this need, or even its existence. See:

1. To think of education as a process similar to osmosis. An osmosis that controls and regulates the exchanges that take place in the millions of membranes integrated in the human body, facilitating or inhibiting exchanges, through the use of the most diverse criteria. But in the case of education, it is not enough to immerse individuals in a good environment so that they can acquire good habits, wisdom, or even just knowledge.
2. Medicines are good for health – if they do anything it is because they act. But then can they act too much or not enough? Don’t you agree?
3. Man is an omnivore, metabolizing foods of animal or plant origin – which means that it has adapted in its constitution in this sense. Why do some want to change adjustments from thousands of years in a few months? Isn’t it forcing nature?

As the examples are evident, and practically infinite, we think it is useless to add to the list.

Rethinking Man and Its Functionality

Complexity, as we have shown above, is often in the processes of investigation and search, and it does not necessarily have to be in the solutions found. In multiple fields and areas of knowledge, as well as in their applicability, we find solutions not only simple, but also evident when we enter their framework. However, although any of our readers do not ignore that the interpretation we make of the world, of the context in which we live and of which we are an integral constituent, is based on the *stimuli* we receive, which are transformed into sensations and interpreted as perceptions, which allows us to elaborate a meaning, we continue to think (simultaneously, what is a paradox), that this image of the world we build corresponds to a “reality”. That others come in the same way, and some, more radical, that any deviation from their meaning is a failure or may even correspond to nonsense. So when we said, early on that “epistemology is a potato” we wanted to signify our enormous respect for epistemology that helps us interpret the world in a slightly more consistent way, as well as by the potato

(symbolically the food) that allows us to harvest the energy (which comes from the sun and the “dust of the stars”, let us not forget it, but that without the potato would escape us and we would be unable to harvest) necessary to live in this world and to be an active component of it.

Some who consider epistemology to be superior to potatoes thought it was a derogatory relationship for epistemology; others, especially if they are hungry, would trade all the epistemology in the world for a few simple (our provocation) potatoes. Knowledge, what we can understand, in the structures it takes and in the uses we give it, not being more important than the oxygen we breathe, than “the potatoes we eat”, than everything around us and with which we sometimes interact directly, is something essential in this path we walk.

However, even speaking (talk - sounds that are transmitted, but that even when we use the same words can mean such different things) about the legacy that was left to us by Einstein, by Thomas Kuhn, Karl Popper, ... and thousands of others, going through some grunts of Neanderthals or roars of dinosaurs (if they roared), we forget to make the necessary adjustments so that we can maintain the coherence of our designs and the balances that make them useful tools in the framework in which we are situated... and the way we integrate there. Speaking (grunting, roaring ...) are forms of erudition (verbiage which does not mean wisdom, nor knowledge), which we must give meaning (a sense, a significant and a signifier) so that it can become a useful tool (we despise, here, the erudition that is nothing but ostentatious or splurge, which are sometimes also useful too). We tried to show contradictions and aspects to be considered in the rationale of the questions that lead to a restructuring of the way of thinking man.

Man evolved, in a process that lasted millions of years and of dialectics in which he created the senses (which he was able to) that allowed him to detect the stimuli that could be advantageous (transforming himself), interacting in such a way that, at the level of his tiny (even seen within the planet Earth) dimension, to transform. In a dialogue that some are late to recognize from the pedestal on which they placed themselves as superior beings in the building of creation [note: although some microorganisms sometimes try to alert this pretentious man, that his power is, after all, very, very, fragile]. But once some paradoxes have been released for the limitations of the space of an article we warn of the problem, we do not want to stick to some slogans and provocations, and we will leave indications about a suggestion of solution that we develop, we debate and we justify, ..., in the form of a book with the title “The Next Technological Jump”. The preparation of the processes can be complex, but the answer obtained in the end may even be very simple, as we’ve stated above. It’s time to try to show it because, we think, we’re in one of these cases. In this line we propose two

concepts to perform a break with the locks that are at the origin of the confusions that we expose above.

A Proposal

Let us dare to go a little further into the unknown (investigate is this, a leap into the unknown, not a step to gather some stones / data, on the frontier of knowledge – without belittling the stones / data, of which we have been leavingsome above). Darwin, with the publication in 1859 (a handful of years from now, only) gave his face (literally, for the insults and aggressions to which he was subjected to innovate) to a break that not only came out of his journey on the Beagle but is also the product of a fummer of ideas about the evolutionary process of life and “The origin of species”. We suggest joining the description of the process in which the struggle for life and the resulting natural selection created a pressure on the appearance, transformation and disappearance of species (species, controversial concept), two concepts that are tools for the consolidation of the rupture.

The Concept of Arat - A Transformation Conditioner

The struggle for life and the resulting natural selection takes place. But what leads to transformation? The mere chance of the appearance and disappearance of “species” that is promoting and generating differentiations?

Or are these transformations also directed and conducted by beacons that will yield the process and give it guidance (do not confuse with determinism)? The reaction to stimuli / aggressions is a characteristic of living beings (put in a brief and simplistic way). We can thus conceive of a “mechanism” in which these reactions condition and adjust the process by articulating aggression / stimulus, the resulting reaction that triggers an adaptation process, which leads to transformation (temporary or definitive, and may even be transmitted to future generations - ARAT. Chance, that happens ... by chance, it is no longer dominant. An adaptation that has a sequence, and there for a continuity, provoked by the MENTAL SCHEMES produced.

The Concept of Mental Scheme

A stabilizer of the transformations carried out. Any procedure (movement or stay still), when repeated enough times, leaves marks, creates rails, which facilitate its repetition thus making it more likely. In the nervous system, for example, but not exclusively, myelinated circuits or synapses are created, with excitatory or inhibiting potentials that facilitate the appearance of a potential of action and its repetition. But the nervous system is not a privileged situation, although it is often, until now, considered the “place of thought”, as “the heart is the center of emotions” The process is described and commented on above. If we look around us with some care, we see that everything that moves leaves a trail, a mark,

naturally some more evident than the others, as well knew the “track dogs” in the hunts and the police of the criminal investigation, for example. And when it stands still, too.

These complementary concepts allow us to understand and explain the transformations that take place in man (in life?), based on the causalities underlying them. They avoid, for example, that we limit ourselves to the description of the changes that we can detect and even the search for the dynamics that we can explore to discover the possibilities of what happens (happened and will happen) in the evolutionary process of man. They are tools

for clarifying and substantiating strategies for understanding, structuring, and using knowledge.

If we apply these concepts to the situations we’ve described above, we can easily see how they allow us to undo the paradoxes in which those situations are blocked and the difficulties of appreciation that condition us.

Conflict of Interest

No conflict of interest with any institution/organization.

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